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13 Apr 98

SUBJECT: Authorization for Release of Technical Information, Control Number: AFRL-PR-ED-TP-1998-074  
Keith McFall "COTAR Opening Remarks IHRPT"

(Statement A)



HPHS  
SEMI-ANNUAL REVIEW 1



COTR OPENING REMARKS

IHPRPT

K. MCFALL

15 APRIL 1998



## Introduction



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- IHPRPT is a joint DOD-NASA-Industry program to increase US rocket propulsion capability by the year 2010.
  - Technology development goals are selected by a government-industry panel, the IHPRPT steering committee.
  - Planning began in 1992 and was finalized in 1996.
  - IHPRPT consists of three phases with 2000, 2005 & 2010 end dates.
  - The HPHS program is an IHPRPT effort supporting Phase I.



## IHPRPT Goal



- HP HS effort addresses the Phase I Electro-Static Propulsion Goal
- The Goal is derived from the basic system performance metrics.
  - Thrust, Power, Life, Dry Mass, Specific Impulse
- Current Goal: 20% increase in system total impulse/wet mass
  - $I_{tot} = m_{dot} t_{life} I_{sp} g : (N \cdot s)$
  - $M_{wet} = M_{dry} + (1 + f_{tank}) m_{dot} t_{life} : (kg)$
  - The Goal is a strong function of  $I_{sp}$
  - It is estimated that the HP HS performance level will approach that needed to meet the goal
- Contract SOW conforms to a previous set of IHPRPT requirements
  - Thruster & PPU Efficiency, Life, and Cost
- Current Goal was established by the steering committee during FY97



## Contract Requirements and IHPRPT Goal



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- Contractor demonstrates Hall system meeting SOW requirements.
  - Performance data will be used to evaluate system capability versus the Phase I Goal.
  - Technology development is the primary focus. To reduce program cost, use of modeling and non-flight type components in demonstrating IHPRPT compliance is acceptable when technology development is not required.



## Concluding Remarks



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- The HPHS is an IHPRPT program.
  - The program should result in a system that addresses both SOW performance requirements and the IHPRPT Total Impulse / Wet Mass goal.
  - While the IHPRPT goal and SOW performance requirements are not identical, it seems that both can be addressed without significantly affecting the effort.